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### 不同運動的氧債分析與探討

### An Analysis of Oxygen Debt in Different Intensity Exercise

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#### 中文摘要

本研究目的希望瞭解運動員在不同強度運動後氧債過程中，其耗氧量及生理相關因素變化情形。計有 20 位受測者( $18.37 \pm 2.74$  yrs)自願參與研究，並分別接受八分鐘的低強度有氧運動及三分鐘最大負荷枯竭運動測試。研究結果發現，受測者於低強度運動後，耗氧量呈較緩和曲線下降。然而在枯竭運動後的前 3 分鐘，耗氧量卻呈直線下降，各階段耗氧量輕 t 檢定發現，亦達顯著差異情形。另外，呼吸交換率、心跳數及呼吸數，在氧債開始後前幾階段亦達顯著差異水準。由研究結果可以發現，只要充份掌握各種運動後的氧債及相關因素，應該有助於運動員在連續性的比賽中克敵致勝。

關鍵字：耗氧量；呼吸交換率

#### Abstract

The purpose of this study is designed to analysis the oxygen consumption and other factor in oxygen debt of different intensity exercise. Twenty subjects ( $18.37 \pm 2.74$  yrs) were assigned to exercise in aerobic exercise and exhaustive exercise for eight minutes and three minutes respectively. The results indicated that the subject's oxygen consumption was declined with a smooth curve after aerobic exercise. However, their  $Vo_2$  was declined rapidly after exhaustive exercise. The  $Vo_2$  were significant different in every stages by using t test. In addition, the RQ, Heart rate and breath rate also showed significant different in the beginning stages. Judging from the above results, we found that if oxygen consumption and other factors information can totally control. The results of the athletics performance can be respected.

Key words : Oxygen consumption; Respiratory exchange ratio (R)